Letter from Alexander Graham Bell to Mabel Hubbard Bell, December 29, 1891, with transcript

ALEXANDER GRAHAM BELL TO MABEL (Hubbard) BELL Journal for my little wife in lieu of letter. Beinn Bhreagh C. B., Dec 29th, 1891. Mrs. A. G. Bell, c/o Macquay&Hooker&Co., Florence, Italy. 1891 December 29th, Tuesday.

Quite a number of newspapers and periodicals came in mail this morning — so had a glorious read in bed and nearly one o'clock before I came down stairs — upon sound of the dinner horn. Before coming down — I dressed as usual in bath room on account of warmth — and warm water. Found that some one had left warm water faucet running in wash-hand basin and had run off all the warm water. Mr. McCurdy and Mr. Ellis out — and — rather an unusual occurance — Mr. and Mrs. Martin in the parlor. They would go to the kitchen for a moment and return with a worried look upon their faces — saw that something was wrong — but as they volunteered no information I asked no questions.

Then I thought they might perhaps have fallen out with the cook so I took a peek into kitchen to see what was going on there.

Maggie was getting dinner ready near the kitchen door — and she had a frightened look — and a face about a yard in length! She would make a rush to the stove for a sauce pan and beat a hurried retreat to the door. She would then work over the dish — with one eye on the dish and the other on the stove. Evidently something was wrong. Went in to investigate. Top of stove was red — hot — that was all I noticed — so I asked Maggie what was wrong. Then Mr. and Mrs. Martin appeared in the pantry — and glanced in cautiously. Something wrong — they said with the hot water connection of the stove. Poor Mr. Martin has a lively recollection of the explosion last year that nearly cost him his life — and has a wholesome 2 dread to the hot water attachment to the stove. Mrs. Martin followed suit — and poor Maggie — not knowing what might be the matter — was bravely

doing her duty in the face of a red hot stove — and the dread of an explosion that might happen at any moment — and all because Mr. McCurdy had left the hot water running in the bath tub upstairs!! Mr. Martin had discovered that in spite of the red hot stove the hot water boiler was cold!

Evidently something wrong he thought — and not understanding what the trouble was — he and Mrs. Martin gave the stove a wide berth and frightened poor Maggie almost out of her wits.

My explanation soon re-assured them — but it was not till the closure of the faucet upstairs was followed by the warming of the boiler — that Mr. Martin would trust himself anywhere near the bug-bear of his life. I am afraid he is getting anxious for my departure — so that the hot water attachment may be removed. Then — and not till then — I am afraid — will the old man breathe freely in this house.

After dinner went to laboratory to pursue the curious mixture of experiments being carried on. Graphophonic experiments mixed up with flying machines!

The ozokerite cylinder treated with alcohol — had loosened from its mould — removed — plaster mould full of air holes — worse than ever before! That is at least a definite answer to the alcoholic query.

Mr. Ellis made four plaster moulds of records — repeating — more carefully than before — the series of experiments to determine the relative efficiency of brushing record — and stirring plaster — in avoiding air holes — and leaving surface good. Proportion of plaster and water carefully weighed — so that composition of plaster mixture should be alike — and temperature of water in the four cases much the same. The moulds are 3 numbered 1, 2, 3,&4 and will be left undisturbed for some days to give plaster time to dry and harden.

Mould Plaster Paris Water Temperature Manipulation or process No. 1 60 per cent 40 % 80° F not brushed not stirred No. 2 60 per cent 40 % 80° F not brushed stirred No. 3 60 per cent 40 % 80° F brushed not stirred No. 4 60 per cent 40 % 80° F brushed stirred

The ozokerite cylinders have not yet loosened — so can make no notes of results.

Mr. Mccurdy appeared at laboratory — knowing we were going to try the flying machine with alcohol in the boiler instead of water — and begged to be allowed to photograph apparatus before it was blown to pieces! We graciously accorded him permission. He took five photographs and started for Baddeck to have Watson the photographer develop them.

I was a little afraid that the projection of alcohol vapor in quantity into the room might fill laboratory with explosive vapor and some accident might ensue. Mr. Ellis however suggested lighting the jets of vapor as they came from the ends of the wings — and thus consume the explosive mixture as it was produced. I retreated behind cover when Mr. Ellis lighted the wicks.

When gas made its apperance Mr. Ellis applied a match — jet caught fire — but the paper wings also were in a blaze on account of alcohol spray upon them.

Waited until jet was stronger and then tried to light then again but gas blew out flame. Opened windows in hopes that current of air would carry explosive gas out of doors — or fresh air would delute it to a safe extent.

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Jets stronger than with steam — but not strong enough to produce a hissing noise. Wings went slowly round making 76 rotations per minute — and machine began to rise (it was balanced by a weight) — either because the rotating wings exerted some appreciable lifting power — or because a good deal of the alcohol had been burned or evaporated making machine so much lighter — that the balancing weight pulled it up. Had to remove 50 grammes from counter-poise to retain machine to steady height.

Mr. Ellis stirred up the wick to try to make fierce flame — and then retreated to cover. Machine rotated as before and then solder on top of boiler began to melt — gas rushed

out and caught fire. We had the fire hose attached and ready in case of accident — but Mr. Ellis easily put the wick out — and leak — flame — without water. Experiment at an end.

We then decided that pressure in boiler was not great enough — and the nozzles of the wing — piece too large. (Diameter 4/100 of an inch)

Mr. Ellis made new nozzles — with orifices 23/1000 of an inch in diameter — had to work at it after supper. We did not re-fill the fire box as we supposed there was enough alcohol left in it for the experiment. Lighted wick and both retreated to cover as before.

Not a very good flame. Machine however rotated better than before — making 92 rotations per minute — but did not rise. Stopped it in order to re-fill the fire — box and make a larger flame. Re-lighted and retreated to cover as before. In a little time vapor began to come out with force enough to make a hiss — (the first hiss heard) — and we expected a great increaseoof rotation. But just as we saw signs of increasing motion — soldering of boiler gave way and there was an explosion. 5 A flame resulted that reached to the ceiling and seemed as large round as our dining room table. This was only a momentary effect — and then the machine burned quietly with flame about a foot high. Burning alcohol was spurted over the room. We were safe however — Mr. Ellis behind the chimney — and I behind the wooden erection through which the belt from the water — wheel passes. I held the fire-hose in my hand — and we waited a few moments to see what would happen next. The walls and floor work-table etc., had blue flames upon them here and there — but nothing caught — and the alcohol flames soon went out — excepting the big blaze from the machine itself. This seemed to do no damage however — excepting to burn up one of the paper wings — and the floor underneath was protected by large sheets of brass which we had placed there in anticipation of some such catastrophe. After satisfying ourselves that the fire was burning quietly and that there was no risk of another explosion Mr. Ellis ventured out — and attempted to smother the flames with a sheet of brass while I held the fire-hose ready to douse him with cold water if necessity arose. We got the flame out without recourse to water — and our experiment came to an end at 10 o'clock p. m.

Mr. McCurdy had quite an adventure today. Mr. McCurdy's boat was on shore — and Mr. McCurdy tried to use it to cross the bay. Now Mr. McCurdy — being of an experimental turn of mind had attempted some months ago to rig up a propeller for his boat — and had cut a hole in the stern through which to pass the axis. Experiment was a failure and he plugged the hole — occasionally opening it to save labor in baling the boat. On this occasion the plug was out — and Mr. McCurdy did not know it — Water came in so fast that when Mr. McCurdy was about one third way across — he saw that the boat would sink before he could reach the other side. He therefore tried to retreat — but broke an oar or rowlock in 6 turning — or at least injured it so as to cripple his efforts. He just managed to reach the wharf that was all — and appeared in the laboratory — with the prespiration dripping from his brow — and salt water from his trousers. Went to the house — to change his things — and went over in another boat. Did not return till midnight — Reports photographs a success. Took lessons in developing from Mr. Watson. We have one dark room in Shepherd's house on mountain — and a red glass will be put in pantry here — in wall between pantry and kitchen — so that developing can be done in kitchen with lamp in pantry.

Just heard that McInnis has been digging for gold upon our place! Asked him about it. He says that two years ago in running line fence he came across a curious stone — or boulder — which had a queer mark upon it — as though engraved upon it for some purpose. A sort of arrow-hand or hand — painting towards a large tree. They all started digging at the place indicated until they reached solid rock. Mr. McCurdy says that they left an old bow — or butter — tub or something of that kind — which they had used to remove earth — in the hole — and someone coming afterwards across the stone with the arrow-head — and the hole with the old bow in it — started the story that gold had been found. The story I understand found its way into the papers at the time but this is the first I have heard of it.

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Things are progressing so well on the mountain — that I may be able to leave here sooner than I expected.

No letters yet from Italy or Gibraltar. Anxious for news. Love to Elsie and Daisy.

Your loving husband, Alec. This is not a letter! That is why I am able to write it!! Alec.